

JPRS 77347

9 February 1981

Japan Report

No. 117

FBI

FOREIGN BROADCAST INFORMATION SERVICE

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MILITARY

JDA ASKS U.S. TO RELEASE MORE F-15, P-3C PARTS

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 pp 4-5

[Text]

The Japanese Defense Agency (JDA) has asked the United States to release more parts of the F-15J fighter and the P-3C antisubmarine warfare aircraft for license production in Japan.

The request came at the second Japan-US consultation on defense technology and equipment in Tokyo Dec. 10.

At the previous meeting in Washington Sept. 3-4, the American side agreed to spread Japan's license production to parts of the F-100 engine, composite material sections of the airframe and components of the Sidewinder missile, all for the F-15J. The latest Japanese request covered radar hardware, components of the inertial navigation system and parts for the auxiliary powerplant. The Americans promised to study the request.

Japanese participants in the consultation were Y. Wada, Director-General of the JDA's Equipment Bureau; A. Bancho, Counsellor; H. Ikeda, Defense Counsellor; K. Sawada, Director of the Defense Planning Division; M. Kashiwagi, Director of the Administration Division; R. Tsutsui, Special Assistant for Research & Development; and equipment directors of the three services. American participants included V. Garber, Deputy Undersecretary of Defense for International Programs, and officials of departments of the Army, Navy and Air Force. Garber later joined the team of Defense Secretary Harold Brown, which visited Japan Dec. 11-13.

The biannual consultation, inaugurated this year, is held alternately in Washington and Tokyo. The next session is expected to take place in Washington after the start of Japan's FY 1981 or April 1981.

CSO: 4120

MILITARY

ASDF TO SET UP RECEIVER FOR TIROS N IN FUCHU

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 5

[Text]

The Air Self-Defense Force (ASDF) has requested the JDA Central Procurement Office to procure a J/FSQ-1 receiver for the Tiros N meteorological satellite. Delivery is planned for Feb. 28, 1982.

The receiver will be installed at Fuchu Airbase in Tokyo to collect meteorological data. At present, it has an old receiver for the Nora satellite at the base. This system had previously been used by US forces.

The Maritime Self-Defense Force (MSDF) also plans to procure satellite communications systems in the current fiscal year. The systems, including parabolic antennas and communications equipment, will be placed on ships for communications through the Marisat communications satellite. These systems have already been attached to the Antarctic observation ship Fuji and the training cruiser Katori.

The MSDF has been allowed to place the systems on two ships of the Fleet Escort Force. It wants to have the systems placed on eight ships or two per Escort Flotilla.

CSO: 4120

MILITARY

MSDF INTENDS TO START PM-X PROGRAM IN FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 pp 5-6

[Text]

The MSDF intends to set up a program for developing the PM-X new missile-armed patrol boat into its budgetary request for FY 1982.

The new boats will replace five existing 100-ton PT ships, which will be decommissioned during the FY 1983-87 Medium-Term Defense Program to be prepared in FY 1981. These vessels are designed for coastal area defense and patrol missions.

The MSDF had originally planned to request the program for FY 1981. Its original program envisaged a 120-ton high-speed type or an improved version of the Boeing commercial jet foil with Harpoon surface-to-surface missiles and machine guns.

As the program has been put off until FY 1982, the MSDF is now reviewing the PM-X scheme. It will draft a final plan by March 1981 for inclusion in its FY 1982 budgetary request. Hydrofoil, semi-submersible and slide types are subject to PM-X selection.

CSO: 3120

MILITARY

WORK STARTS ON BASIC MT-X DESIGN IN OCTOBER 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 6

[Text]

The JDA Technical R&D Institute (TR&DI) has requested about ¥2,400 million for FY 1981 to start work on basic design of the MT-X intermediate jet trainer in October 1981.

According to current planning, the basic design will be completed by the end of FY 1982. If work on the basic design starts as planned, it will request about ¥5,000 million for FY 1982 to finance work on detailed design from October 1982 to the end of FY 1983.

A three-year fabrication program will start in FY 1983, involving four aircraft for flight tests, two for fatigue tests and 16 engines. This program is expected to require about ¥30,000 million.

The four for flight tests will be delivered from October 1985 to February 1986. Before this, the first aircraft for fatigue tests will be delivered at the end of FY 1984 to complete tests necessary for starting flight tests in June 1986. Tests with the second will be carried out for one year from the end of FY 1985.

Flight tests will comprise technical evaluation tests in FY 1986 and operational tests in FY 1987.

CSO: 4120

MILITARY

TORPEDO PROGRAMS APPROVAL SOUGHT

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 pp 6-7

[Text]

The JDA's TR&DI hopes to have its ¥5,200 million budget request for development of GRX-2 and -3 torpedoes approved for FY 1981. This is one of the priority R&D programs for the fiscal year.

About ¥4,600 million is earmarked for fabrication of the GRX-2 high-speed, long-range homing torpedo and test equipment from FY 1980 to 1982. In FY 1980, appropriations of about ¥1,900 million were approved.

The GRX-2 will be designed to be superior to the US Navy MK-48. Its service entry certification is expected to come after tests in FY 1982 and 1983 following the FY 1980-82 fabrication.

As for the GRX-3 short-range antisubmarine torpedo, the TR&DI plans to work out a comprehensive design in FY 1981 at cost of about ¥600 million based on components fabricated in the previous years. In FY 1980, about ¥650 million was approved for fabricating the body, guidance system and test equipment.

The GRX-3 is designed to replace the existing Model 73 torpedo as well as the modified Model 73 under development. It will outperform the US Navy MK-46.

Thus, the TR&DI is developing short- and long-range torpedoes with improved homing and deep-attacking capabilities and improved accuracy to meet deployment of modern torpedo carrying equipment, including 2,900-ton DD and 1,400-ton DE destroyers and P-3C antisubmarine patrol aircraft.

CSO: 4120

MILITARY

JDA TO DECIDE ON BADGE-X AIR DEFENSE SYSTEM IN FY 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 pp 6-7

[Text]

The Japanese Defense Agency (JDA) is expected to decide on the modernized BADGE air defense system (BADGE-X) in FY 1981 and start construction in FY 1982.

Prior to the decision, JDA is proceeding with research on the new system in the current fiscal year with about ¥300 million, after evaluation of the existing BADGE system in FY 1979.

It will soon receive a report from the US Air Force and MITRE on a model study of the BADGE modernization program and determine mission requirements by the end of February. JDA will then seek proposals from domestic computer manufacturers on their studies for the Air Self-Defense Force (ASDF) in June and July. A final decision is expected in July or August before its budget request for FY 1982 must be prepared.

The BADGE-X program will require 10 years. No alternate program will appear in the next 15 to 20 years. Therefore, it will be difficult to have the BADGE-X contract monopolized by one or two companies.

Depending on proposals of computer manufacturers, the prime contract might be given to a company capable of handling computers, display systems, communications equipment, data link and process systems, indicators, overall command/control capability and a total concept. In that case, the prime contractor will bear major responsibility with hardware components manufactured separately by subcontractors.

Although domestic manufacturers can supply hardware on their own, software, including a total concept and system configuration, will have to depend on advanced American knowhow. Local firms are expected to seek cooperation with US firms such as Hughes Aircraft, Westinghouse, General Electric, Litton and General Dynamics.

MILITARY

SH-60B NOT DESIGNED TO REPLACE MSDF HSS-2B

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 pp 7-8

[Text]

The Maritime Self-Defense Force (MSDF) will purchase two Sikorsky SH-60B Seahawk helicopter airframes as green aircraft only for tests of MSDF antisubmarine warfare (ASW) weapons systems during the FY 1980-84 Medium-Term Defense Program (NTDP).

Although the SH-60B had been viewed as a leading candidate to replace the HSS-2B ASW helicopter, the MSDF has tentatively shelved introduction of the SH-60B as a HSS-2B replacement in the face of reports that the Seahawk will cost more than ¥10 billion each, over MSDF-planned limits. Thus, the MSDF is reconsidering selection of an HSS-2B replacement. No alternative candidates exist at present.

The MSDF intends to procure the two SH-60B airframes from funds contained in the FY 1982 budget. It will take delivery in FY 1985 and then, mount MSDF-configured weapons systems by the end of FY 1987 for technical and operational tests from FY 1988 to 1989.

While proceeding with SH-60B procurement, new ASW helicopters, including the British Westland WG-34 Sea Lynx, the new-model Kamov SH-2F and a Japanese type, will appear as potential candidates to replace the HSS-2B. The MSDF will select a replacement from them. The SH-60B will also become a candidate.

HSS-2B type helicopters have been procured since FY 1978. Delivery started in the current fiscal year. The service life of the HSS-2B with improved avionics has been stretched from 5,000 hours to 5,500 hours. As flight hours average 500 hours a year, the helicopter will end its

service life in 11 years. Therefore, attrition will start in FY 1990. The MSDF will continue to procure HSS-2Bs until introduction of advanced ASW helicopters.

The MSDF procured 12 HSS-2Bs from FY 1978 to 1979 and plans to procure 46 more--20 for ground use and 26 for shipboard use--under the FY 1980-84 MTDP. Under the FY 1983-87 MTDP, they will be purchased to replace HSS-2As keeping the 74-ASW-helicopter fleet at strength. If operation of new ASW helicopters starts by FY 1988, procurement of HSS-2 series helicopters will be ended 26 years after first deliveries.

C80: 4120

MILITARY

GSDF TO PROCURE AH-1S HELICOPTERS FROM FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 p 8

[Text]

The Ground Self-Defense Force (GSDF) hopes to procure AH-1S antitank helicopters from FY 1982. The GSDF has given up plans to start procurement in FY 1981 because of its failure to prepare a specific purchasing program.

Its full-scale study on the procurement program will be conducted in the beginning of FY 1981 before the JDA drafts an equipment plan for FY 1982 in June.

The GSDF already has two AH-1S's and evaluation tests show performance is better than operational requirements.

The two aircraft are now being used to help prepare a training syllabus for AH-1S pilots at the GSDF Aviation School. Instructor training is also planned in the near future.

CBO: 4120

MILITARY

FY 1981 DEFENSE BUDGET DRAFT FINALIZED

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 pp 5-8

[Text]

The government completed at the end of December 1980 its national budget for FY 1981. The budget, approved at a Cabinet meeting Dec. 29, amounted to ¥46,788.1 billion, not including supplemental appropriations, up 9.9 percent over the initial 1980 budget.

Defense spending as a result is to increase by 7.61 percent to ¥2,400 billion. The Japanese Defense Agency (JDA) had originally requested a 9.7-percent raise, excluding a 2.2-percent increase in salaries. The ¥2,400 billion defense budget equals to 0.906 percent of the FY 1981 GNP, which is estimated at ¥264,800 billion.

The defense budget includes ¥458.6 billion for procurement of front-line weapons and other major equipment for the three Self-Defense Forces (SDF), up 17.7 percent.

New weapons and equipment include such items as six Japanese designed Tan-SAM short-range surface-to-air missile units (four for the GSDF and two for the ASDF) six 203mm self-propelled howitzers and a 4,500-ton DDG guided-missile, all-gas-turbine destroyer.

The JDA has also obtained approximately ¥1,600 million for launching the MT-X new intermediate jet-trainer development program in FY '81.

Major military equipment approved in the final Cabinet draft of the FY '81 national budget follows:

<u>ITEM</u>	<u>ORIGINAL REQUEST</u>	<u>APPROVED</u>
*Class "A" GSDF ground equipment		
New type pistols	2,200	1,800
Model 64 rifles	5,000	5,000
Model 62 machine guns	51	51
Model 74 vehicle-mounted machine guns	38	38
84mm recoilless guns	219	219
Model 79 antiship/tank missile (SSM) launchers	9 sets	9 sets
Model 64 81mm mortars	44	44
Model 75 155mm self-propelled howitzers	34	30
203mm self-propelled howitzers	7	6
Model 75 130mm multiple-loaded rocket (MSSR) launchers	8	8
Model 74 main battle tanks	80	72
Model 73 armored personnel carriers	9	9
Model 78 tank recovery vehicles	5	3
Model 78 snow vehicles	30	22
Model 70 pontoons	3	3
*Surface-to-air guided weapons		
Improved Hawk	1 group	1 group
Tan-SAMs	10 sets	6 sets
Stinger (portable) missiles	49 sets	20 sets

<u>ITEM</u>	<u>ORIGINAL REQUEST</u>	<u>APPROVED</u>
*Aircraft		
<u>GSDF</u>		
OH-6D observation helicopters	8	8
HU-1H utility helicopters	6	5
LR-1 liaison/reconnaissance aircraft	2	1
<u>MSDF</u>		
TC-90 instrument flight trainers	4	4
KM-2 primary trainers	1	1
HSS-2B antisubmarine helicopters	11	6
S-61A search/rescue helicopter	1	1
<u>ASDF</u>		
F-1 support fighters	3	2
E-2C early warning aircraft	4	4
C-130H tactical transports	6	2
T-2 advanced trainers	9	6
HU-2 search/rescue aircraft	1	1
V-107A search/rescue helicopters	2	2
*MSDF ships		
4,500-ton DDG destroyer	1	1
2,900-ton DD destroyers	3	2
2,200-ton SS submarine	1	1
440-ton MSC minesweepers	2	2
500-ton LSU landing ship	1	0

<u>ITEM</u>	<u>ORIGINAL REQUEST</u>	<u>APPROVED</u>
1,100-ton AGS survey ship	1	0
3,600-ton AS submarine tender	1	1
Auxiliary ships	5	2
FRAM program	2(ships)	1(ship)

C50: 4120

MILITARY

AIM9L FOR ASDF F-15 TO BE PRODUCED UNDER LICENSE

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 p 8

[Text]

The US Government tentatively agreed to a Japanese proposal on local production of the AIM9L Sidewinder missile for the Air Self-Defense Force/McDonnell Douglas F-15J fighter-interceptor aircraft at a meeting of Japanese - American defense officials held toward the end of last year, sources here report. The Japanese Defense Agency (JDA) and the US defense authorities will shortly hold talks to finalize the agreement. The JDA is expected to begin selection of the Japanese licensee as soon as the agreement is signed.

Presently Mitsubishi Heavy Industries Ltd., Mitsubishi Electric Corp. and Toshiba are competing for the license production of the infrared-ray homing air-to-air missile. The selected manufacturer will negotiate with Raytheon and Ford Aerospace on a licensing contract after the JDA appointment. The production of the AIM9L for the ASDF is expected to amount to approximately ¥5,000 million a year.

CSO: 4120

MILITARY

SDF ACHIEVES 33 PERCENT OF FIVE-YEAR MTDP AIRCRAFT TARGET IN 2 YEARS

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 4-5

[Text]

Japan's tri-service Self-Defense Forces (SDF) have been authorized to procure 43 aircraft under the FY 1981 budget, following 85 aircraft in FY 1980, enabling the three SDFs to achieve 128 aircraft or 32.8 percent of the 390-aircraft procurement target in the FY 1980-84 Medium Term Defense Program (MTDP) in the first two years.

However, the authorized aircraft purchase plan for FY 1981 seems unsatisfactory for the SDF which want to fulfill the MTDP targets for procurement of aircraft and other frontline equipment ahead of schedule. The advanced fulfillment of the aircraft target would depend on the FY 1982 budget.

Two C-130H transports and four E-2C airborne early warning aircraft are incorporated into the FY 1981 SDF aircraft purchase plan. This is seen as great progress. But the plan indicates a setback in procurement of HSS-2B antisubmarine and S-61A search/rescue helicopters, F-1 support fighters and T-2 advanced trainers.

The SDF plans two important aircraft--the F-15 fighter and the P-3C antisubmarine patrol aircraft--for the FY 1982 budget request. They are expected to try to quicken procurement of these aircraft. In that case, adverse effects on procurement of other aircraft would become a problem.

CSG: 4120

MILITARY

JDA DECIDES TO DEVELOP NEW BADGE DOMESTICALLY

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 5-6

[Text]

The Japanese Defense Agency (JDA) has decided to develop a new BADGE air defense system domestically with partial software introduced from the United States.

In FY 1981 (starting next April), it plans to complete a system design and select a domestic prime contractor for the new BADGE program. The system will be procured from FY 1981 at a cost of ¥200,000 million to ¥300,000 million.

The government has approved funds for research into the new BADGE in the FY 1981 budget, enabling the Air Self-Defense Force (ASDF) to send a research mission to the United States possibly this spring to examine the latest details of technology import.

The new BADGE will replace the existing 10-year-old system. The JDA has incorporated the new BADGE program into the FY 1980-84 MTDP because the current system will become unable to cope with technologically advanced intruding aircraft and that introduction of E-2C airborne early warning aircraft is expected to increase available data beyond the existing system's capacity.

The ASDF has already sent a research mission to the United States and asked the US Air Force and the MITRE Corporation to study problems of the current system. Based on their study report to be prepared by the end of March, the ASDF will draft a specific overall plan for the new BADGE for presentation to domestic computer manufacturers.

Computer and defense-related companies have welcomed the JDA decision on domestic development and procurement of the new BADGE, launching a full-fledged competition for the new BADGE contract. A prime contractor is expected to be selected by this summer.

The prime contractor is certain to be selected from five major computer manufacturers--Nippon Electric Co. (NEC), Hitachi Ltd., Mitsubishi Electric Corp. (MELCO), Fujitsu Ltd. and Toshiba Corp.

NEC manufactured the current BADGE with technology introduced from Hughes Aircraft. It is eyeing the new BADGE contract based on this experience.

Hitachi, meanwhile has set up a defense-technology promotion headquarters to obtain the new BADGE order and Fujitsu has been developing a high-speed computer for the new system. MELCO and Toshiba, which have landed massive defense equipment orders, are also eager to gain the contract.

CSO: 4120

MILITARY

FUNDS FOR MT-X DESIGN IN FY 1981 APPROVED

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 p 6

[Text]

The JDA has received approval for funds for basic design of the new MT-X intermediate trainer incorporated into the FY 1981 budget prepared by the government late in 1980.

The government has approved ¥328 million in FY '81 and ¥1,627 million in follow-on disbursement for the basic MT-X design, although the accepted funds slip below the JDA-requested ¥495 million in appropriation and ¥1,903 million in follow-on disbursement.

The basic design work is planned to last until FY 1982. This will be followed by detailed design from FY 1982 to 1983 and fabrication of a test aircraft from FY 1983 to 1985. Test flights of the first prototype MT-X will begin in the summer of 1985.

As to the F-3 engine seen as a candidate for the MT-X's powerplant, four out of five requested prototypes have been approved for FY 1981, following five in FY 1980. Funds amount to ¥3,260 million. The nine prototype engines will be used for rating tests prior to any flight tests.

Funds have also been authorized for the control-configured vehicle (CCV) and remotely-piloted vehicle (RPV) projects. A fund totaling ¥2,510 million will be used for modification of a T-2 trainer in FY 1981 to make an experimental CCV for flight tests starting in the autumn of 1982. Parts for modification are being fabricated in the current fiscal year ending in March 1981. Some ¥60 million is set aside for procurement of the second prototype RPV in FY 1981 after the first in FY 1980.

CSO: 4120

MILITARY

NEW MBT PROGRAM APPROVED AS ORIGINALLY PLANNED

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 p 7

[Text] The Ground Self-Defense Force (GSDF) and the Technical R&D Institute (TR&DI) have confirmed their original plan to start technical development of a new main battle tank (MBT) in FY 1982 as funds for two final-stage research items in FY 1981 have been approved.

The two R&D items for FY 1981 are research and fabrication of the multiplex armor structure costing ¥100 million and design of systems costing ¥90 million.

The new MBT for development in the late 1980s will be superior to all existing and oncoming tanks in the world, according to the GSDF/TR&DI plan.

Research on the new MBT started when the Model 74 MBT was officially adopted by the GSDF in FY 1974. After basic research using the Model 61 MBT, test fabrication of a 96mm smooth-bore gun was carried out from FY 1975.

Regarding guns and ammunition for the MBT, the TR&DI started fabrication of a 105mm smooth-bore gun and its ammunition in FY 1977. A 120mm smooth-bore gun and its ammunition were fabricated in FY 1979. Technical tests of the 120mm gun lasted until November 1980.

Among other MBT elements, a fire control system enabling firing during running was fabricated in FY 1977. A diesel engine was designed in FY 1976 and fabricated in FY 1977. Then, a power transmission (a hydraulic pump motor) and armor structure were fabricated for research. In FY 1979, assembling of a gun stabilization system was launched.

Research on these MBT elements paved the way for completing a total MBT system at the end of March 1981. The total system will be tested in FY 1981.

Prior to the technical development starting in FY 1982, the GSDF will prepare operational requirements for the new MBT by the end of March.

MILITARY

DEVELOPMENT OF NEW ANTITANK MISSILE TO START IN FY 1982

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 7-8

[Text]

The government in its FY 1981 budget has approved almost all of ¥100 million requested to make up for a shortfall in funds for the third test fabrication of the new Chu-MAT antitank missile, paving the way for technical development of the missile starting in FY 1982.

The Chu-MAT missile project is now under way by the GSDF and TR&DI. About ¥1,200 million was earmarked in the FY 1980 budget for the third test fabrication. The additional ¥100 million for FY 1981 promises completion of the third fabrication in the fiscal year prior to technical development.

The new Chu-MAT is designed to replace the Model 64 MAT, which is the first-generation antitank missile. In research and development of the Chu-MAT, the GSDF and TR&DI have attached importance to safety of launchers as well as improvement of maneuverability and striking power because the Model 64 MAT and the larger second-generation Ju-MAT missiles force launchers to expose themselves to enemy tanks dangerously.

Procurement of Model 64 MAT missiles finished in FY 1979. The Ju-MAT missiles, which are capable of attacking landing ship tanks as well as ground tanks, have been being deployed since FY 1979.

CSO: 4120

MILITARY

SHIP R&D FUNDS SLASHED TO 622 MILLION YEN FOR FY 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 p 8

[Text]

Funds for the TR&DI's research and development on ships in the FY 1981 budget have been slashed from the requested ¥1,268 million to ¥622 million to cover five of the seven originally planned projects.

The five approved projects are for a new diesel engine for a minesweeper (¥140 million against the requested ¥590 million), an experimental reinforced-plastics ship (¥370 million as requested), a low-noise auxiliary powerplant (¥60 million as requested), a low-noise propeller (¥35 million against the requested ¥40 million), low-noise ship systems (¥17 million against the requested ¥18 million).

Disapproved were the ¥50 million project for highly tensile rolled steel material for submarines and the ¥140 million project for a submarine system for detecting mines placed in the sand.

CSO: 4120

ECONOMIC

JAPANESE INDUSTRY LEADERS OFF TO YXX TALKS

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 2

[Text]

Kenji Uchino, Vice Chairman, and Niichiro Ishida of the Civil Transport Development Corp. (CTDC) left for Seattle, Washington, last week for talks with Boeing on possible collaboration in a new medium-size aircraft development program coded here as the YXX.

Prior to the Seattle meeting, Chairmen Gakuji Moriya, MHI, Kiyoshi Yotsumoto, KHI, and Eiichi Ohara, FHI, met Shohsei Kurihara, Director-General, Machinery and Information Industry Bureau, and other top officials of MITI, and exchanged opinions on recent talks with leaders of Fokker Aircraft, Airbus Industrie and Boeing on joint development of the YXX. The industry leaders requested MITI for necessary government funding for the program in the coming fiscal year. The MITI officials apparently replied that agreement between the Japanese industry and a prospective foreign partner would be necessary before any money can be authorized.

Following recent discussions with Chairman F. Swarttouw of Fokker and President B. Lathiere of Airbus Industrie, Japanese industry leaders talked with T. J. Backer, Director - International Business, Boeing Commercial Airplane Co., in early December and exchanged frank opinions. No agreement was reached although the difference between the two parties is not great, according to local industry sources.

With the holiday season just round the corner, industry leaders here, however, do not expect much progress from the coming talks in Seattle, the sources added.

CSG: 4120

ECONOMIC

SJAC TO STUDY FUTURE OF SMALL AIRCRAFT

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 3

[Text]

The Society of Japanese Aerospace Companies (SJAC) has set up a task force for survey on areas and courses for future utilization of small aircraft in the current fiscal year on the basis of the SJAC's broad study in FY 1979 on social needs, development potential and demand factors.

The task force met Dec. 2 and elected Prof. Akira Azuma of Tokyo University chairman.

Specific survey subjects selected at the meeting follow:

(1) Demand for small aircraft: Demand factors in major advanced countries and interest of potential Japanese users will be studied to chart future courses of Japanese demand for small aircraft.

(2) Potential areas and guidelines for development of small aircraft: Development in major advanced countries will be studied to forecast potential of development in Japan. Obstacles to development will also be studied.

(3) Diffusion of small aircraft and problems of manufacturers: Problems with spread of small aircraft and development of manufacturers in Japan will be studied to discover measures to promote use of such aircraft.

CSO: 4120

ECONOMIC

JCAB TO INSPECT BOEING 767 PARTS PRODUCED IN JAPAN

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 pp 3-4

[Text]

The Ministry of Transport, Civil Aviation Bureau (JCAB) may inspect Boeing 767 parts produced in Japan at the request of the US Federal Aviation Administration (FAA).

It has already started consultations with quarters concerned on how to upgrade inspections with the present number of inspectors. Budgetary aspects and inspection fees are also being studied, although the ministry's budget request, prepared last August, failed to incorporate funds for the new inspection program.

The shortage of inspectors is a problem that must be solved before starting wide-ranging inspection of parts of the Boeing 767, which Japanese aircraft manufacturers are to produce jointly with Boeing Co. and Italy's Aeritalia. In spite of this, JCAB is eager to cooperate in inspection of 767 parts in order to promote exports of Japan's aerospace products.

JCAB has so far only conducted safety inspection of aircraft. In FY 1979, it handled three type certification cases, 1,156 airworthiness certification cases, 191 repair and modification cases, 12,668 component certification cases involving engines, propellers and others, 30 noise requirements certification cases, 27 noise-related modification cases and regular safety checks.

For inspections, except regular safety checks, airlines must pay fees set by the JCAB. In FY 1981, the JCAB is expected to raise the inspection fees at the urging of the Ministry of Finance.

CSO: 4120

ECONOMIC

MITI PLANS TO CLOSE NIHON MANUFACTURING

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 pp 3-4

[Text]

The Ministry of International Trade and Industry (MITI) has come up with a plan to dissolve the semigovernmental Nihon Aeroplane Manufacturing Co. (NAMC) for production of YS-11 turboprop aircraft by the end of FY 1982 or March 1983. The firm's business will be taken over by the private sector.

NAMC was established in June 1959 by the government and 186 private companies, including aircraft manufacturers. Since YS-11 production was suspended in 1973, business has centered on manufacture of spare parts for 162 existing YS-11s and receipt of deferred payments for past exports. The aircraft company has remained constantly in deficit. Although it was provided ¥25,900 million by the government in 1972 to cope with the deficit, total deficits are estimated to reach ¥9,000 million beyond capital of ¥7,800 million by the end of FY 1982.

MITI has judged that it is impossible for the government to continue supporting the deficit-ridden company. The government, which is also hard hit by deficits, has been trying to streamline government and semigovernment corporations.

CSO: 4120

ECONOMIC

AIRCRAFT INDUSTRY TO ASK IMPROVEMENT OF SUBSIDY SYSTEM

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 p 4

[Text]

Japanese airframe manufacturers intend to ask the government to improve the current subsidy system for the industry so that government subsidies will cover aircraft production as well as development.

So far, the government has raised subsidies only for development of commercial transports. When new aircraft become ready for mass production after development, government subsidies are suspended.

However, investments in aircraft programs frequently peak after the development stage, forcing manufacturers to shoulder a large financial burden. Production of YS-11 has resulted in a cumulative deficit of ¥36,000 million. In the Japan-US-Italy Boeing 767 program, Japanese partners are allowed to produce only 15 percent of the airframes.

The industry request will cover the start in 1981 of the Y-XX medium transport program, in which the Japanese industry wants to cover at least one-third of the airframe production. Selection of foreign partners is now under way.

Subsidies for aircraft production are expected to have favorable effects on not only the Y-XX program but also future aircraft development and production programs.

Besides such new subsidies, the industry plans to seek an interest subsidy system for aircraft production like the current system for shipbuilding.

CSO: 4120

ECONOMIC

KHI TO START PRODUCTION OF BK-117 TRANSMISSIONS

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 pp 4-5

[Text]

Kawasaki Heavy Industries Ltd. (KHI) plans to complete the first production type KBO-3 transmission system of the BK-117 twin-turbine helicopter in March 1981 after ongoing technical tests of seven prototypes.

KHI undertakes manufacture of the transmission in the joint BK-117 helicopter program with MBB of West Germany. The domestic-produced transmissions will be delivered to MBB from KHI's Gifu Works. The initial production rate is set at two to three monthly, however, the monthly production rate will be increased to six within a year and eventually to 10. KHI will turn out a total of 500 units by the end of 1987.

The KBO-3 transmission will provide power from the engine to the shaft to drive the 383-turn main rotor, the 2,169-turn tail rotor, the 5,429-turn hydropump and the 9,500-turn cooling fan.

Features of the KBO-3 transmission follow:

- (1) A double-reduction system using bevel and helical gears is adopted to allow for a decrease in the number of parts.
- (2) While oil lines on the transmission surface are eliminated, a double oil jet formula is used.
- (3) Holes are contained in the case for inner inspections from outside.
- (4) New alloys and materials are used to improve reliability.
- (5) A fail safe design is adopted for the four supports.

CSO: 4120

ECONOMIC

HITACHI TIES UP WITH NISSAN ON ROCKET STUDIES

Tokyo JPE AVIATION REPORT-WEEKLY in English 31 Dec 80 pp 5-6

[Text]

Hitachi Ltd., a major electric machinery manufacturer, has agreed with Nissan Motor Co. on joint research and development of rockets for defense and space exploration, launching full-scale penetration into the defense procurement market.

The two firms have also invited Fuji Heavy Industries Ltd. (FHI) to form a group for development of a new missile.

Hitachi intends to upgrade its technology by participating in defense equipment production.

Hitachi set up a defense technology promotion headquarters in August 1980 to seek defense equipment orders. Lately it started an interchange of its electronics control technologies and Nissan's rocket technologies through engineers.

Although Hitachi has manufactured tanks and other equipment during and before World War II, its postwar defense equipment production centered on communications equipment and sensors. Other equipment includes training simulators and self-propelled ponton bridges. The firm is behind other major electric machinery manufacturers in defense equipment production.

Nissan is the only Japanese manufacturer of solid fuel rockets. Its sales of defense and space equipment totals ¥12,000 million per year. It has so far cooperated with Hitachi in electronics components for cars. The latest tieup with Hitachi on rocket technology is expected to develop Nissan's rocket control expertise.

In developing the new missile, FHI wants to become a prime contractor. Although it has developed missile launchers, the firm has never received contract to develop complete missile systems. The Hitachi-Nissan-FHI contract is expected to run for five years.

ECONOMIC

1981 EQUIPMENT, OPERATION PLANS FOR THREE MAJOR AIRLINES

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 p: 1-3

[Text]

* Japan Air Lines (JAL)

The Japanese flag carrier will acquire two Boeing 747LRs, one 747F and three McDonnell Douglas DC-10-40s during FY 1981. One of the three DC-10s will be for domestic service. Five DC-8s will be retired during the period, and all DC-8-50s will be phased out by the end of March 1982.

The 747 service on the Tokyo - Los Angeles route will be increased from the present seven flights to 14 flights a week. On the Tokyo - Vancouver route, the one weekly 747 flight will be increased to two, pending government approval. In the summer season, three weekly flights will be increased to four. On the China route, the present two DC-10 flights and six DC-8 flights a week will be increased to five DC-10 flights and seven DC-8 flights, pending government approval. The three weekly flights to Sidney, presently flown by the DC-10, will be served by the 747. The present nine 747 and nine DC-8 flights a week on the Guam route will be changed to 15 weekly 747 flights. Seven DC-10 and three DC-8 flights a week on the Manila route will be changed to nine weekly DC-10 flights.

In order to improve passenger comfort, JAL plans to install 60-degree reclining seats on the DC-10 serving the New York line, starting from February 1981. The same reclining seats will gradually be introduced on its 747LRs in FY 1981, April '81 - March '82.

* All Nippon Airways (ANA)

ANA will introduce six more Boeing 747SRs in 1981, one each in January, May, November and December, and two in February. By the end of December 1981, the airline will have 15 Boeing jumbo jets in its possession.

When the New Akita Airport opens in June, it will convert the present five daily YS-11 flights to five 727/737 flights. The Lockheed TriStar will be introduced on the Tokyo - Akita route during the autumn season if passenger demand is sufficient. One surplus YS-11 aircraft will be sold during 1981.

With the completion of construction work at parking spots at Haneda, the JCAB is expected to authorize more increases in domestic flight frequencies there. ANA will then increase flights to and from the airport on routes where market demand is greatest.

Five daily flights will be served by jets on the Tokyo - Hiroshima route, pending completion of noise-prevention facilities at Hiroshima airport. The 747SR will begin service on the Tokyo - Hakodate route. The 737 will replace the YS-11 on the Tokyo - Yonago line when the present airport facility improvement program at Yonago is completed. The carrier also plans to open a daily 737 service between Fukuoka and Niigata if and when traffic control problems on the route are solved.

By the end of FY 1981 (end of March 1982) ANA will possess 15 Boeing 747SRs, 21 Lockheed TriStars, 22 727s, 15 737s and 26 Nihon YS-11s, totaling 99 aircraft.

* Toa Domestic Airlines (TDA)

TDA plans to greatly improve its local-route service with the introduction of the Airbus Industrie A300 and the McDonnell Douglas DC-9 Super 80 aircraft during 1981.

With delivery of three A300s by early 1981, the airline will begin wide-body service on the Tokyo - Kagoshima and the Fukuoka - Kagoshima routes from March. The A300 will then be placed on the Tokyo - Sapporo, -Misawa and -Nagasaki routes.

In addition to the three A300s it will receive during this fiscal year, three more aircraft will be delivered during the latter half of FY 1981. The airline will prepare for introduction of the A300 to numerous local airports equipped with 2,000-meter runways.

The first of the eight DC-9 Super 80s it has ordered will be delivered in January. All eight aircraft will be delivered in the first half of FY 1981. The DC-9 Super 80s will initially be placed on the Tokyo - Kushiro, -Obihiro, -Misawa, and -Oita routes as well as the Osaka - Kagoshima route.

TDA plans to open new routes from Nagoya to Akita and to Yamagata. It also plans to upgrade the present seasonal services between Sapporo and Aomori, Tokyo and Aomori, and Osaka and Aomori to scheduled flights year round. Additionally, it plans to increase flight frequencies to and from Haneda as soon as restrictions are eased.

Three DC-9-41s will be sold during this fiscal year. By the end of FY '81, TDA will possess 71 airliners.

CSO: 4120

ECONOMIC

JAL TO BEGIN SELECTION OF NEW AIRCRAFT

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 p 3

[Text]

Japan Air Lines (JAL) is expected to inaugurate a New Aircraft Selection Committee within its Corporate Planning Office early this year in order to prepare for selection of new aircraft which it plans to introduce starting in FY 1983. In addition to the Boeing 747 and the McDonnell Douglas DC-10 it now operates, the Boeing 767 and the Airbus Industrie A300 are also listed as candidates, sources say. A decision is expected perhaps by this summer. JAL wants to purchase six aircraft.

JAL presently has 36 Boeing 747s, 14 DC-10s, 29 DC-8s and two 727s in its fleet. All DC-8s will retire by FY 1985. Five 747s and DC-10s each will be delivered during this fiscal year. In FY '81, three 747s and three DC-10s will be delivered. Two Boeing jumbos and two DC-10s will be obtained in FY '82.

Due to its phasing out of the DC-8 aircraft, JAL is reportedly considering introducing such smaller aircraft as the 767 and/or the A300, as well as increasing its 747/DC-10 fleet.

CSO: 4120

ECONOMIC

FY 1981 APPROPRIATIONS FOR AIRCRAFT, ENGINE PROJECTS

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 pp 3-4

[Text]

*YXX

As a result of the last-minute budgetary session between Minister of International Trade and Industry Rokusuke Tanaka and Minister of Finance Michio Watanabe at the end of December, it was decided that the government would appropriate ¥353 million, including administrative expenses, for the YXX next-phase medium passenger aircraft development program in FY 1981. The sum represents 75 percent of the total FY 1981 YXX program cost amounting to ¥468 million for basic designing, developing and testing of the new aircraft.

*767(YX)

At the minister-level session, it was also decided that the government would allocate ¥2,040 million for development of the Boeing 767 in FY '81. This is 50 percent of the sum required by the Japanese side for the development program. It was also decided that no government funding will be made for development of the 777 aircraft.

*YS-11

At the Cabinet meeting Dec. 29, the government approved MITI's plan to dissolve Nihon Aeroplane Mfg. Co. by the end of March 1983 and to let the private sector take over its business activities. It was decided that ¥412 million will be appropriated in the next fiscal year as part of expenses to pay back its debts which amount to more than ¥8,000 million.

***RJ500**

The government has decided to allocate ¥4,722 million, including administrative expenses, in the FY '81 national budget and ¥3,820 million in the follow-on expenditure for development of the RJ500 (known here as the XJB) aero engine now being promoted by Rolls-Royce Limited of the UK and the Japanese aero-engine industry. This is two-thirds of the total sum to be raised by the Japanese side during the fiscal year.

CSO: 4120

ECONOMIC

IHI ENDS PRODUCTION OF J3, J79 ENGINES

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 pp 4-5

[Text]

Ishikawajima-Harima Heavy Industries Co. (IHI) has completed production of the J3 and the J79 turbojet engines, the company announced at the end of December.

*J3

The designing of the J3 was initiated in July 1953 by Japan Jet Engine Co., which was jointly established by the predecessors of the present IHI, FHI, Nissan Motor and MHI. Full-scale development and fabrication of the engine for the T-1 jet trainer was launched in 1955. Eight development engines were completed by early 1959 and the production rights were transferred to IHI on March 31, 1959.

The J3 made its maiden flight aboard the Fuji T-1F1 at Utsunomiya airfield on May 17, 1960. The engine was officially adopted by the Japanese Defense Agency for the T-1B intermediate trainer and later as the booster engine for the Kawasaki P-2J anti-submarine patrol aircraft. A total of 247 J3 engines were produced.

*J79

IHI signed a licensing contract with General Electric in 1960 on the production of the J79. Delivery of the engine for the Air Self-Defense Force/Lockheed F-104J fighter-interceptor began in 1962. A thrust-increased version of the J79 was later adopted for the ASDF/McDonnell Douglas F-4EJ aircraft. Six hundred and ten engines were produced for Japanese military aircraft. A total of 17,000 J79s were produced for operators throughout the world, according to IHI.

CSO: 4120

ECONOMIC

JAL'S AIR CARGO INCREASING SMOOTHLY

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 1-2

[Text]

Japan Air Lines' air cargo transportation to and from Japan has been increasing smoothly thanks to the nation's brisk exports.

In the first half of FY 1980 (starting in April 1980), JAL handled international cargo totaling 91,905 tons, up 14 percent over a year ago. It also scored year-to-year rises of 8.4 percent in October 1980 and 14.7 percent in November.

Cargo from Japan in the first half of FY 1980 rose 26.5 percent over a year ago to 44,250 tons, while that to Japan leveled off. This attested to a conspicuous imbalance between exports and imports.

The export-oriented smooth growth in international air cargo is expected to boost JAL's revenue from cargo business for the whole of FY 1980 beyond the target of ¥123,000 million, in stark contrast with slackening passengers for international flights.

Air cargo from Japan on trans-Pacific, southern Europe-bound and Southeast Asia-bound routes increased notably. Cargo on the Pacific routes went up 27.5 percent over a year ago in the first half of FY 1980 to 26,237 tons, went up 14.2 percent in October to 5,617 tons, and rose 19 percent in November to 5,754 tons. On southern Europe-bound and Southeast Asia-bound routes, cargo jumped 23.5 percent to 11,966 tons in the half-year period, 21.4 percent to 2,228 tons in October, and 32.3 percent to 2,144 tons in November. Cargo for Hong Kong and Singapore, in particular, rose sharply.

The large growth on these routes is attributable partly to brisk cargo traffic between Southeast Asia and the United States via Japan. Semi-finished products are sent from the United States to Southeast Asia, and then finished products are returned to the United States. Other factors include a sharp rise in Southeast Asia's demand for clothing and other products.

Chartered flights for exports of car parts to the United States and Europe were brisk in the first half of FY 1980 thanks to active automobile exports.

CSO: 4120

ECONOMIC

FY 1981 BUDGET PROMISES SMOOTH PROGRESS FOR RJ500 PROGRAM

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 2-3

[Text]

The government in its FY 1981 budget has authorized ¥4,720 million and ¥3,820 million in follow-on disbursement (appropriation in FY 1982) for the Japan/Rolle-Royce RJ500 aero engine development project, promising smooth progress in the program entering the second year in FY 1981.

Planned for the next fiscal year are (1) detailed design of engines for ground tests, (2) analysis of elemental development data (3) supply of materials and tools for eight prototype engines, and (4) manufacture of prototype engines.

The budgetary appropriation of ¥4,720 million will cover two thirds of the ¥7,080 million which the Japanese side will raise for the first three items. The total consists of ¥460 million for planning and development, ¥1,700 million for design, ¥1,000 million for test development, and ¥4,000 million for fabrication.

The follow-on disbursement of ¥3,820 million corresponds to two thirds of ¥5,729 million to be raised by the Japanese for the fourth item.

Basic design of the RJ500 engine will be completed soon as originally scheduled. Partial drawing for the engine will be prepared by the middle of calendar 1981 and that for fabrication by September. Then, parts for the first prototype will be delivered by December for assembling ending in March 1982.

CSO: 4120

ECONOMIC

FUNDS APPROVED FOR FABRICATION OF TEST STOL AIRCRAFT

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 3-4

[Text]

The government has given a go-ahead on the Science & Technology Agency's FY 1981-83 program for fabrication and development of a short takeoff and landing (STOL) test aircraft by earmarking ¥4,370 million in FY 1981 appropriations and ¥3,900 million in follow-on disbursement as requested.

This has paved the way for the first test flight of the low-noise fanjet STOL aircraft at the end of FY 1983.

The funds form part of the agency's FY 1981 budget prepared toward the end of 1980, totaling ¥368,270 million in current-year appropriations and ¥139,187 million in follow-on disbursement, up 9 percent over the current fiscal year.

The STOL project funds are (1) ¥3,262 million in FY 1981 and ¥3,455 million in follow-on disbursement for research and development of the test aircraft, (2) ¥316 million in FY 1981 for technical research, (3) ¥263 million in FY 1981 and ¥445 million in follow-on disbursement for flight simulation equipment, (4) ¥130 million in FY 1981 for a pilot system testing room, and (5) ¥395 million in FY 1981 for other aspects of the project.

The agency's FY 1981 budget also includes ¥85,356 million in FY 1981 for promotion of space development (as against the originally-requested ¥88,200 million.) The authorized funds cover almost all spacecraft projects, including the second communications satellite for launching in FY 1982, the second broadcasting satellite for launching in FY 1983, the second geostationary meteorological satellite for launching in FY 1981, the first maritime observation

satellite for launching in FY 1984, and development of the H-1 rocket and an earth resources satellite.

Funds for the H-1 rocket and earth resources satellite were approved at the agency's final-stage top-level negotiations with the Ministry of Finance. Appropriations of ¥2,000 million and follow-on disbursement of ¥9,285 million are set aside for starting development of the H-1 rocket in FY 1981. Regarding the earth resources satellite, ¥702 million in FY 1981 and ¥665 million in follow-on disbursement were approved for development of a synthetic aperture radar and other optical sensors. Some ¥200 million for design of the satellite was disapproved.

Besides the spacecraft project funds, ¥370 million is incorporated into the space development appropriation for experiments in space.

Meanwhile, expenses for coordination of promotion of science and technology is newly established in the agency's budget to cover the agency's earlier request for development of new aircraft materials with advanced technology. The expense is set at ¥3,350 million for the next fiscal year.

CSO: 4120

ECONOMIC

BRIEFS

AID TO WESTERN SAMOA--Tokyo, 20 Jan, KYODO--Japan will extend to the government of Western Samoa a grant aid up to yen 200 million for its project to promote education, the government said Tuesday. Notes to the effect were exchanged Tuesday in Wellington between Takashi Oyanada, Japanese ambassador to Western Samoa, and Feesago Fepulea'i, high commissioner of Western Samoa. Western Samoa has requested Japan to provide grant assistance in necessary equipment and materials for expanding school education in order to cope with the increasing population and to develop the manpower necessary for the development of the country, it said. [Text] [OW210153 Tokyo KYODO in English 0929 GMT 20 Jan 81 OW]

PRC UNDERWEAR AGREEMENT--Osaka, 24 Jan, KYODO--Gunze Sangyo Co., a major textile maker, has agreed with China to undertake joint production of cotton underwear in Jinan, Shandong Province. Under the agreement reached with the Shandong branch of the China National Textiles Import and Export Corporation, Gunze and Mitsui and Co. will jointly build a factory in the Chinese city to produce cotton underwear with yarns produced locally. All the products at the factory will be supplied to Gunze. Gunze and the Chinese corporation have yet to negotiate details of the joint project, such as production items and volume. Under the present plans, Gunze said, the plant will be put into operation in November and annual production will amount to one to two million pieces initially. [Text] [Tokyo KYODO in English 0100 GMT 24 Jan 81 OW]

AID TO PANAMA--Tokyo, 21 Jan, KYODO--Japan will provide Panama with grant aid of up to yen 32,500,000 to help purchase laboratory equipment for physics, chemistry and biology, the Foreign Ministry said Wednesday. The ministry said an agreement to this effect was concluded the same day in Panama by Japanese Ambassador Toru Ishii and Panamanian External Relations Minister Carlos Ozores Typaldos. Panama is making efforts to improve its scientific education facilities particularly for senior high schools, the ministry said. [Text] [OW230037 Tokyo KYODO in English 0540 GMT 21 Jan 81 OW]

GRANT AID TO BURMA--Tokyo, 22 Jan, KYODO--Japan will give Burma a grant aid up to yen 35 million for repair parts needed to improve its telephone network, the Foreign Ministry announced Thursday. It said notes to this effect were exchanged in Rangoon between the officials of the two countries. Japan in 1976 donated yen 600 million worth of equipment and materials for improving the facilities of the Rangoon and Mandalay exchanges. But the facilities are suffering from continual trouble because of the overuse of switchboard parts, the ministry said. Burma has thus requested Japan for assistance in providing the necessary spare parts, it said. [Text] [OW230037 Tokyo KYODO in English 0739 GMT 22 Jan 81 OW]

UNIDO TOKYO OFFICE--Tokyo, 22 Jan, KYODO--The United Nations Industrial Development Organization (UNIDO) opened an office in Tokyo to promote investments in developing countries by industrial nations, the Ministry of International Trade and Industry said. The Japanese Government agreed last March to set up and run the office for UNIDO, MITI said. The UNIDO office in Minami Aoyama, Minato Ward, will supply to Japanese firms information about industrial projects in developing nations. It will also provide developing nations with information on Japanese technology transfer schemes. Other activities of the new office will include promotion of contacts among companies interested in investment both in Japan and developing countries. Similar UNIDO branch offices have already been opened in the United States, West Germany, Belgium, Austria and Switzerland, MITI said. [Text] [OW230037 Tokyo KYODO in English 0819 GMT 22 Jan 81 OW]

AID TO MALDIVES--Tokyo, 17 Jan, KYODO--Japan will give a grant of up to yen 15 million to Maldives for the procuring of educational broadcasting equipment by the Information Broadcasting Ministry, the Foreign Ministry said Saturday. It said notes to this effect were exchanged in Colombo by the officials of the two countries. Japan will provide the ministry with transmitters, microphones, tape recorders and record players, the ministry said. [OW200113 Tokyo KYODO in English 0158 GMT 17 Jan 81 OW]

AID TO SENEGAL, GUINEA-BISSAU--Tokyo, 19 Jan, KYODO--The government has decided to extend a grant in aid amounting to yen 500 million to Senegal to help it increase transport facilities, the Foreign Ministry announced Monday. Notes to this effect were exchanged between Sonoo Uchida, Japanese ambassador to Senegal, and Ousamane Seck, economic and finance minister, last Friday. The aid was extended at the request of the West African nation in order to implement a project to increase its transport facilities with the particular aim of transporting relief supplies to regional drought victims. Senegal's vital grain production declined substantially last year because of drought, resulting in a serious food shortage in outlying rural areas, the announcement said. Meanwhile, the government also decided to give a yen 200 million grant aid to Guinea-Bissau to help the West African country start an ambitious irrigation project to grow rice plants on the Geba River basin, the ministry announced. The grant aid will be used for purchase of irrigation materials. Notes to this effect were exchanged between Sonoo Uchida, Japanese ambassador to Guinea-Bissau, concurrently ambassador to Senegal, and Alexandre Nunes Correia, ambassador from Guinea-Bissau to Senegal, in Dakar. [Text] [OW200113 Tokyo KYODO in English 0852 GMT 19 Jan 81 OW]

PRC MACHINERY LEASING AGREEMENT--Tokyo, 19 Jan, KYODO--Japan Leasing Corp. of Tokyo said Monday it has signed an agreement with China to work as the sole agent in leasing deals for machinery equipment in the country. The arrangement with the China National Machinery Import and Export Corporation also requires the Japanese firm to extend knowledge of the leasing business to China. Company officials said such a leasing contract is needed because of a lack of foreign currencies needed to proceed with China's modernization. [Text] [OW200113 Tokyo KYODO in English 0222 GMT 19 Jan 81]

AID TO THAILAND--Tokyo, 16 Jan, KYODO--Japan will extend a grant totaling yen 40 million to Thailand to supply physical training equipment to the Thai sports organization, the Foreign Ministry announced Friday. Notes to this effect were

exchanged Thursday in Bangkok by Japanese Ambassador Motoo Ogiso and Apilas Oostananda, director general of the Department of Technical and Economic Cooperation of Thailand, the ministry said. The present cooperation from Japan is intended to provide the training center with such gymnastic equipment as rings, horizontal bars, parallel bars, pommel horses and vaulting horses, officials said. [Text] [OW200113 Tokyo KYODO in English 0348 GMT 16 Jan 81 OW]

MACHINE EXPORTS TO EUROPE--Tokyo, 19 Jan, KYODO--Japanese exports of machining centers to Europe in last November totaled yen 2 billion, an increase of 86 percent sharply over one year before, the Japan Machinery Exporters' Association reports. Exports of the machines to Europe during the January-November period 1980 amounted to yen 20.7 billion, up 159 percent largely compared with the corresponding period of 1979. The first exports to Europe involved 101 units in 1977, followed by 262 units in 1978, 520 units in 1979, and 1,035 units by the end of November 1980. It was the first time that annual exports of machining centers to Europe exceeded the 1,000-level. [Text] [OW200113 Tokyo KYODO in English 0729 GMT 19 Jan 81 OW]

YS-11'S TO MID-PACIFIC AIRLINES--TDA has sold two used YS-11 turboprop aircraft to Mid-Pacific Airlines of Hawaii. The first will be delivered within 1980 and the second in early 1981. The Japanese airline will send two representatives to Mid-Pacific for one year to carry out YS-11 support service because the Hawaiian carrier has never flown the aircraft. Mid-Pacific is expected to purchase up to eight YS-11s from TDA. TDA has so far sold YS-11s to Reeve Aleutian Airways. But YS-11s are still TDA's mainstay airliners especially for airports which cannot accommodate jets. As jet-accommodating airports increase in the future, however, it will promote phasing out of its YS-11s. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 1]

ANA SELLS TRISTAR JETS--All Nippon Airways (ANA) plans to sell its TriStar L-1011s, following sales of its Boeing 727s. It has already started negotiations with potential purchasers, although there will be no specific deals before the end of the current fiscal year or March 1981. As for the 727s, it sold one in FY 1979. In FY 1980, two were sold to Korean Air Lines. One more will be sold by the end of the current fiscal year. As a result, ANA's 727 fleet will total 22. Larger 727 sales are expected in and after FY 1983, when it will acquire 767s. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 p 2]

CSO: 4120

SCIENCE AND TECHNOLOGY

TEST RESULTS, FUTURE PLANS FOR JNR MAGNETIC LEVITATION TRAIN

Tokyo KOTSU GIJUTSU in Japanese Oct 1980 pp 24-27

[Article by Kunio Miyazaki: "Results and Future Plans on the Miyazaki Experimental Levitation Railroad"]

[Text] 1. Introduction

The experimental train ML-500 of the Miyazaki experimental levitation railroad being developed under the auspices of the Japan National Railway achieved a speed of 517 km/h in December of last year, and this event is still in the memory of many people.

The objectives for the Japan National Railway's participation in the development of the levitation railroad, the facilities of the Miyazaki experimental line (Fig. 1, Table 1), and the status of the experiment as of the end of last year have been described a number of times in articles in this journal (Note). On the other hand, a new modification in the form of a U-shaped guideway in place of the inverted T-type guideway has been introduced to the cross-sectional configuration, and it was decided to take this opportunity to discuss this alteration together with the results of the experiment to date and also introduce some of the future plans.

2. Progress of the Experiment on the Miyazaki Line

The progress of the experiment is outlined in Table 2, and it is evident that there have been no major problems. The running experience has been extended to 10,778 km. These experiments are receiving world-wide attention, and there have been more than 20,000 visitors from both Japan and abroad who have visited this line since the experiment was started 2 and a half years ago.

Much of the data of Table 2 is for the ML-500 experiment, but the experiments of May-June of 1979 were on the ML-500R in which the outer plate of ML-500 was removed and a helium cooler was installed. Also a part of the experiment between November 1978 and February 1979 was conducted with funds from the "Low Pollution Transport Machine Development Fund" granted the National Railway by the Ministry of Transportation.

(Note) These articles have appeared in the following issues during the last three years. January 1978, January 1979, and January 1980.

Table 1. Outline of the Facilities of the Miyazaki Experiment Line (As of the End of 1979)

1 設備・方式	2 概	3
3 支持・案内・推進の方式	超電導磁石を用いた誘導反発型支持・案内・導上高さ: 約100mm) 4 超電導磁石を用いたLSM推進 5	
6 ガイドウェイ	全長7 km, 高床構造, 逆T断面 7 大部分が直線, 一部に半径1万mの曲線 8 大部分が平直, 一部に1000分の1の勾配 9	
10 実験車両 (ML-500)	長さ13.5m, 幅3.8m, 重量10 t. 11 補助支持・案内: ゴムタイヤ車輪 12	
13 LSM用電力供給設備	電圧: 66000V, 60Hz 14 周波数変換装置: 60Hz → 120Hz 15 サイクロコンバータ 16 入力: 120Hz, 出力: 0~33.1Hz 17 出力最大電流: 1100A 18 電源設備: 3相4線式2回線 19	14 15 16 17 18 19
20 車両制御設備	コンピュータを中心とした中央制御方式 1	1
22 情報伝達設備	車上・地上間: 無線による 23	23
24 ブレーキ設備	再生ブレーキ, 発電ブレーキ, 摩擦ブレーキ 25	25
26 冷却液化装置	ヘリウム の液化等を行う 27	27

Key:

1. facility-mode
2. general outline
3. type of support, guide, propulsion
4. induced repulsion type support-guide (levitation height: about 100 mm) using superconducting magnet
5. LSM propulsion using superconducting magnet
6. guideway
7. 7 km total length, high trestle construction, inverted T-cross section
8. mostly straight line, partly curve of radius 10,000 m
9. mostly flat, partly of 5 parts in 1,000 grade
10. experimental vehicle (ML-500)
11. 13.5 m long, 3.8 m wide, 10 t weight
12. auxiliary support-guide: rubber tired wheels
13. power supply facility for LSM use
14. power used: 66,000 V, 60 Hz
15. frequency converter: 60 Hz → 120 Hz
16. cycloconverter
17. input: 120 Hz, output: 0~33.1 Hz
18. maximum output current 1,100 A
19. power source: 3 phase 4 line mode, 2 circuits
20. vehicle control facility
21. central control mode focused on computer
22. information transmission facility
23. by radio between vehicle and ground installations
24. brake device
25. regenerative brake, power generating brake, friction brake
26. coolant liquefaction device
27. liquefy helium

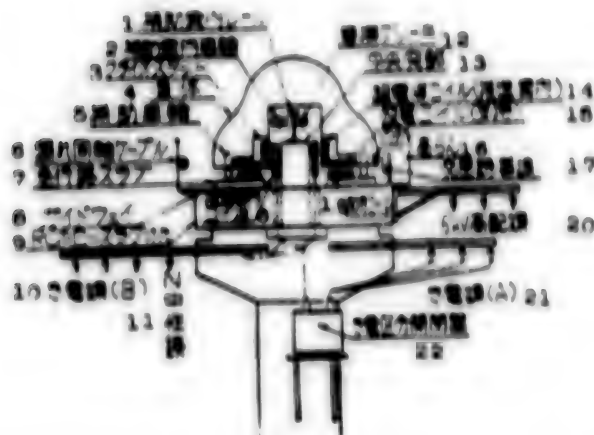


Figure 1. Cross-Section of Inverted T-Guideway and ML-500
(Facility Used up to December 1979)

Key:

- | | |
|--------------------------------|---|
| 1. auxiliary guide rail | 12. friction brake |
| 2. auxiliary guide wheel | 13. central projecting sectional |
| 3. cryostat | 14. superconducting coil (propulsion guide) |
| 4. vehicle body | 15. superconducting coil (support) |
| 5. auxiliary wheel | 16. antenna high railing |
| 6. leak coaxial cable | 17. intersecting induction line |
| 7. runway slab | 18. propulsion guide |
| 8. guideway | 19. support coil |
| 9. RC Holoslab /phonetic/ beam | 20. 6 kV high tension distribution line |
| 10. power line (A) | 21. power line (B) |
| 11. central neutral line | 22. power distribution switch |

3. Results of Experiments to Date

The objectives of the Miyazaki experimental line are to operate a levitation railroad with an experimental facility whose basic properties are close to those of an actual scale train and to gather data necessary for theoretical analysis. The experiments to date have adequately fulfilled these objectives.

Parts of the results have already been reported in this journal, and this paper will discuss a few other general features making every effort to avoid duplications.

1) High Speed Running

The run curve at 517 km/h is shown in Fig. 2.

It is highly significant that it was possible while operating on a short guideway of 7 km to have been able to realize in a scant 2 and a half years since start of construction of the experimental line speed in the neighborhood of 500 km/h. This remarkable result was possible not only because of the efforts of the concerned people at the Japan National Railway but also as the result of the efforts of the many cooperating industries and their technologists exploiting the contributions of many people of a wide spectrum of specialties which were all directed at this common goal.

2) Vehicle Movement During Running

Figure 3 demonstrates that the location of the center of gravity of the ML-500 changes with the speed of the levitational run. According to the theory of the induced reaction mode magnetic levitation employed in the Miyazaki Experimental Line, the levitational height should be roughly constant when the speed is greater than 300 km/h, but this figure shows the levitational height to be greater, the greater the speed. This effect is thought due to the levitational force provided by air. Figure 4 shows the maximum amplitude.

Figure 4 shows maximum amplitudes in up-down and left-right vibrations at the center of gravity of the ML-500 (the maximum length from the peak to valleys of the vibrations) while Fig 5 shows how the maximum value of the angular vibrations of the ML-500 vary with the running speed, and both sets of values are seen to decrease as high speeds are approached. This behavior is in agreement with the theory for magnetic levitation of the induction repulsion type.

3) Attitude Control of Experimental Train

It has been presumed that there will be need to control the attitude during running (lean in the forward-backward direction) of the ML-500 because of its short length, and a tail wing was installed for some running tests which were conducted. It was discovered, however, that by adjusting the magnetic strength (strength of the magnet) of the levitational superconducting magnet aboard the vehicle beforehand, the attitude could be naturally maintained in good state even without a tail wing. The net result was that no tail wing was used for the high speed running test at 500 km/h.

4) Running in Tunnels

Tunnel running experiments with the ML-500 were conducted in January-August of 1979, and data on air resistance in tunnels, pressure changes, and vehicle motions were gathered.

When the vehicle entered or left a tunnel, it underwent severe up-down motions and pitching, however, it was established that tunnel running could be observed in adequately stabilized manner.

5) Feel of the Ride

The ML-500 had no passenger compartment and no riders were taken along, but the vibration of the instrument stand satisfied the feel standards that were established for the Shinkansen (Bullet Express) at the initial stage of its construction.

6) Current Control of the Linear Synchronous Motor (LSM)

The current control technology of the LSM made great strides during the 2 and a half years experience with the ML-500, and this development greatly contributed to the attainment of the 500 km/h goal.

7) Performance of the Structures and Guideway

No problems were encountered with strains in the beams of the high trestles and in the stresses of the central projecting sections during high speed operation at

500 km/h. In addition, no trend to increased disalignment to the guideway was observed during the 2 and a half years of operation.

8) Effects of Wind and Rain

There were some days of strong wind and rain during the 2 and a half years during which the running experiments were conducted, but there was no incidence when the adverse weather had any effect on the safety of the operation. It was judged that the levitational railroad possesses about the same level of strength against the effects of wind and rain as the present railroads. No experience has been obtained as yet on the effects of accumulated snow, but it is thought that here again the levitational railroad will have about the same performance as the regular railroad.

Table 2. History of the Miyazaki Experimental Line Tests

1 実験期間 (昭和年月)	2 主要実験内容	3 最高 速度	4 実験 区間数	5 走行 距離
52. 7~52. 10	低速走行実験 (車輪走行)	132km/h	1. 3km	364km
52. 12~53. 3	中速 (250~300km/h) 走行実験	301	3. 1	1, 245
53. 6~53. 11	高速 (300~350km/h) 走行実験	347	4. 7	3, 432
54. 1~54. 2	模擬トンネル走行実験	300	4. 7	609
54. 5~54. 6	ヘリウム冷却装置車載走行実験	200	4. 7	404
54. 8~54. 12	曲線通過および超高速走行実験	517	7. 0	4, 726
15 (合計 10, 778km)				

- 12 (注) 1. 実験期間の空白はガイドウェイの延伸その他の工事期間である。
 13 2. 模擬トンネルの完成は54年9月。
 14 3. 以上の他、55年1月および55年6月にリニアモーターへの電力供給設備についての実験 (実験車は使用しない) が行われた。

Key:

1. experimental period (year of Showa, month)
2. major experimental subject
3. maximum speed
4. distance traveled
5. total travel
6. low speed running experiment (running on wheels)
7. medium speed (250-300 km/h) running experiment
8. high speed (300-350 km/h) running experiment
9. simulated tunnel running experiment
10. running experiment with helium cooler abroad
11. curved line and super high speed running experiment
12. Note) 1. the gaps in the running period were when guideway extensions and other projects were under way
13. the simulation tunnel was completed in September 1979
14. in addition to the above, experiments were conducted on the power supply facility to the linear motor (experimental vehicle was not used) in January and June 1980)
15. total



Photo 1. ML-500R with Helium Cooling Facility on Board

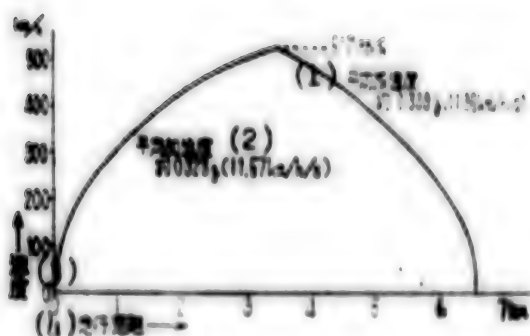


Figure 2. Run Curve of ML-500 (When Running at 517 km/h)

Key:

1. average deceleration about 0.339 g (11.96 km/h/s)
2. average acceleration about 0.328 g (11.57 km/h/s)
3. speed
4. distance

Figure 3. Levitational Height of ML-500

Key:

1. levitational height
2. speed

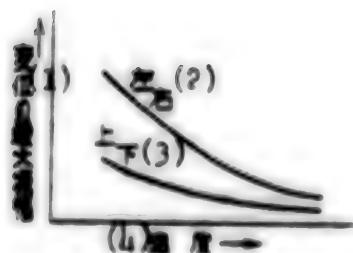
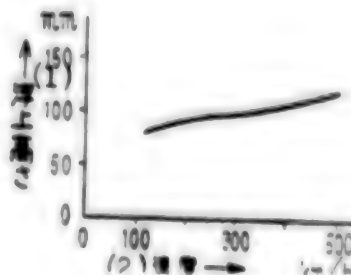


Figure 4. Maximum Amplitude of Up-Down, Left-Right Displacements of ML-500 (Trends Versus Speed)

- Key: 1. maximum amplitude of displacement
2. left-right 3. up-down 4. speed

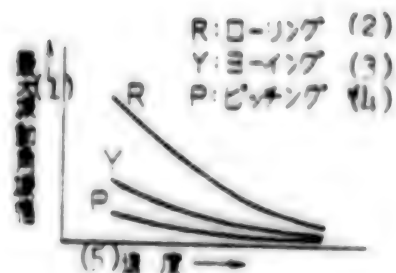


Figure 5. Maximum Vibrational Angle of Angular Displacement of ML-500 (Trends Versus Speed)

- Key: 1. maximum vibrational angle amplitude
2. rolling 3. yawing 4. pitching 5. speed

4. Plan of Experiment with U-Shaped Guideway

1) From Inverted T to U-Shape

The cross-section of the guideway of the Miyazaki Experimental Line to date was an inverted Y affair, and the ML-500 was designed with this guideway in mind.

While it was thought that a U-shaped affair with no central projection section (Fig 6) would be better from the standpoint of the construction of the guideway for the levitational railroad, the inverted T-shape was adopted initially for the following reasons.

i) The lateral forces necessary for the magnetic guidance of the vehicle were not clearly understood, and an inverted T was more advantageous than the U-shape for effective generation of lateral forces.

ii) Smoother operation was realized by locating the operating points of the guide forces and thrust forces close to the center of gravity of the vehicle.

Since then advances in vehicle motion analysis elucidated many of the heretofore unclear aspects of the experiment making possible experiments using the U-shaped cross-section guideway.

Because the test results to date demonstrated the effectiveness of the test vehicle, the costs of the construction of the test vehicle for use on the U-shaped guideway were partly subsidized by the government.

When compared to the inverted T-type vehicle, the vehicle for the U-shaped guideway has the following features.

i) The vehicle height can be made lower thereby reducing air resistance, and the cross-sectional areas of tunnels can be made smaller

ii) The channel construction is simplified

iii) Equipment to be carried on board can be placed under the floor thereby making possible effective use of the space below the floor

2) Purpose of Experiments with U-shaped Guideway

The objectives of the experiments which were initiated using the U-shaped guideway were not simply to compare the vehicle motions with those of the inverted T guideway but to link passenger carrying vehicle (three cars) to follow the characteristics with passengers, establish the reliability and improve the performance of vehicle borne cooling facility and power supply facility, study the overall structure taking into consideration the correspondence between guideway and vehicle, and develop method of providing electric power to within the vehicle and thereby get insight of the various properties under conditions close to the actual operation.

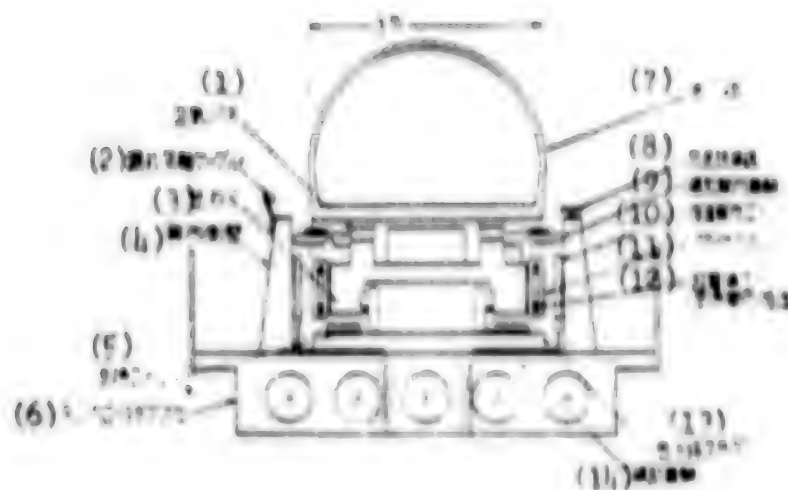


Figure 6. Cross-Section of U-Shaped Guideway and Experimental Vehicle

Key:

- | | |
|-----------------------|---|
| 1. air spring | 8. intersecting induction lines |
| 2. leak coaxial cable | 9. auxiliary guide wheel |
| 3. chassis frame | 10. thrust guide coil |
| 4. side wall of guide | 11. cryostat |
| 5. support coil | 12. superconducting coil (support guide propulsion) |
| 6. RO holoslab beam | 13. guideway slab |
| 7. vehicle body | 14. auxiliary wheel |

3) Facility for Use with U-Shaped Guideway of the Miyazaki Experimental Line

In the modification of the facility which had been adapted to the inverted T cross-section to the U-shaped cross-section guideway, every effort was made to use the already present facility as effectively as possible.

1) Guideway facility

The central projecting section and the auxiliary guide rail (H-shaped steel) which were parts of the inverted T guideway were removed from this new guideway, and a construction with sidewalls for the guide was placed to the left and right while the trestles were used as is. The side walls for the guide were placed 1,755 mm from the center to either side of the guideway. These side walls were 1,700 mm high, 250 mm wide at the top, and 450 mm wide at the base and were constructed from concrete. The ground coils for thrust guidance were installed on these side walls (see Fig 6).

The guideway slab was existing slab which was cut away in the direction of travel to narrow the width.

The basic pathway used to measure the precision of installation of the ground coils (low magnetic mountain shaped steel) was taken over directly from the inverted T system.

2) Electrical Equipment

The modifications to the electrical equipment to conform to this change to the U-shaped guideway included changes to the length of the power supply section to accommodate the linking together of three cars and the relocation of the leak coaxial cables to accommodate the modification in the guideway.

The ground based thrust guide coils had heretofore been divided into 29.4 m sections. While this 29.4 m power supply sections length can be altered to conform to the length of the vehicle, such a change would greatly cut down on the rest periods of the experiment while increasing construction costs and it was decided at the outset to change this length to 42 m in line with the length of three cars linked together.

The leak coaxial cable and the intersecting induction lines were relocated to the upper section of the newly installed side walls.

Since the volume of various information to be passed between the ground based control and measurement facilities and the vehicle borne equipment will increase with the number of vehicles being strung together, the transmission mode which had been used to date was reworked, and plans are under way for the introduction of a new channel.

3) Ground Coils

The coils used with the inverted T could be used as the ground coils, but there was need to changes in the connections to make up for the changes in structure accompanying this change to a U-shaped guideway and changes in the power supply section length.

4) Experimental Vehicle

The experimental vehicle was newly constructed and possessed the cross-sectional shape shown in Fig 6. The length was set at about 13 m when a single vehicle was involved in order to provide better air flow while the length of a three-car assembly was about 30 m. These vehicles were provided with space for human passengers. While it is not known when actual passengers will be riding these vehicles, it is possible for man to ride these vehicles to demonstrate the feel of the ride.

Other features which distinguish this new vehicle from the ML-500 are the I-shaped superconducting magnets and the use of vehicle borne cooling units which will be described later. There are also experimental equipment to study noncontact type induction current collection mode to provide the power necessary to run the air conditioning, illumination, and vehicle borne cooling systems.

The levitation, guiding, and propulsion modes of this vehicle are almost identical with those of ML-500, but guide side walls are used to guide the vehicle during low speed operation. In addition, an aluminum sheet is installed to the terminal point side to generate supercurrent braking power to provide emergency braking capability.

5) Vehicle Borne Superconducting Magnet

The ML-500 used two types of superconducting coils for propulsion-guidance and support purposes which were placed in an L-shaped cryostat (low temperature insulated

vessel) in the superconducting coils which were employed. Advances in research and development made possible the use of a single superconducting coil which could be exploited to provide the three functions of support, guidance, and propulsion for this new vehicle for the U-shaped guideway (Table 3), and the superconducting magnet assumed an I-shape. This innovation made possible a more simple cryostat design, and the new cryostat was made smaller with less heat penetration.

6) Vehicle Borne Cooling Equipment

The liquid helium within the cryostat which is used to cool the superconducting coils is gasified by heat entering from the outside. This gas was either discharged to the atmosphere or sealed within the cryostat while the ML-500 was running, but the vehicle for the U-shaped guideway is provided with a vehicle borne cooling equipment which reliquefies the helium gas within the cryostat which has vaporized.

Developments on this type of vehicle borne equipment were under way from before, and the first stage test products were already being demonstrated for their capabilities on the ML-500R.

The power for this cooling equipment is provided from the combination of a storage battery and an inverter.

4) Future Schedules

Experiments on the vehicle for the U-shaped guideway are expected to be under way by the end of this year (1980) using a single vehicle on the newly completed 4 km guideway. It will be the end of next year when experiments on a 3-car array will be initiated in a 7 km guideway just as was the case with the inverted T affair.

Table 3. Superconducting Coil for the U-Shaped Guideway Vehicle

項 (1)	項 (2)	項 (3)
(1) 磁石の形状	U-型 (I ₁)	
(2) 磁石の寸法	500 × 700 mm	
(3) 磁石の材質	2001AT*	
(4) 磁石の重量	2100 kg	
(5) 磁石の電流	1000 A	
(6) 磁石の電圧	1000 V	
(7) 磁石の電圧	1000 V	
(8) 磁石の電圧	1000 V	

Key:

1. item
2. data
3. shape of coil
4. racetrack shape
5. dimensions of coil
6. magnetomotive force of coil
7. distance between poles
8. *) kAT: kiloampere-turn = 1000 × (coil current) × (number of turns)

5. Future Prospects

It is thought that the levitational railroad will see even greater advances with the experiments involving the U-shaped guideway and the three-vehicle array, but some comprehensive experiments are necessary to demonstrate the safety and reliability and to ferret out the troubles that will crop out on the operation of such a line before the fact in order to ready the system for actual use.

The experimental line to be used for this purpose will be of the order of 40 km and will incorporate branch lines, curved tracks, grades, and tunnels. It will accommodate vehicles which will be roughly full size. They will be able to use combination of different vehicles and still run safely to provide the technology vital to a railroad which must be demonstrated. The early realization of this stage is hoped for.

6. Post Statements

The development of the levitational railroad spearheaded by the Japan National Railway is one of the several large type self developmental technologies which this country is undertaking, and its progress to this stage has been made possible by the support and cooperation of a large number of parties.

On the other hand, there are many subjects which need to be demonstrated experimentally as was mentioned before, and many improvements need to be made to enable an even better product. The author asks the support of the readers so that the levitational railroad will become practical at as early a date as possible.

(Plans Headquarters, Technology Development,
Japan National Railway)

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CSO: 8129/0279

SCIENCE AND TECHNOLOGY

DEVELOPMENT OF INFORMATION INDUSTRY IN 1980'S RECOMMENDED

Tokyo DENKI SHIMBUN in Japanese 9 Dec 80 p 4

[Text] The Information Industry Division of the Council of Industrial Structure (an advisory organization to the Ministry of International Trade and Industry (MITI), headed by Inaba Hideo) submitted on 8 December to MITI Minister Tanaka an interim report on policy goals for the information age and information industry in the 1980's. The interim report is based on the fundamental belief that the information age will create vitality and wealth in all areas of industry, society and personal life, and that it will also contribute to the world. The report points out (1) that the basis for an information-oriented society should be constructed by improving laws and regulations involving such matters as protection of privacy; (2) that the foundation of the information industry should be formed by developing and consolidating the information-oriented social structure; and (3) that technological development should be promoted to bring about international information sharing. With regard to technological development, the report particularly emphasizes the need for coordination among the government, academic institutions and private industry on their respective roles. In addition, it stresses the need for promoting research and development of high-speed computer systems for scientific and technological use along with 5th generation computers, and development of innovative basic technology and software technology. The final report will be released next June.

The interim report which was submitted on 8 December contains answers to questions asked by the MITI minister in late June as to what the ideal character of an information-oriented society and information industry in the 1980's should be and what policy measures should be taken to realize it. Facing these questions, four sub-committees each studied the issues on the information processing industry, the concept of establishing an information-oriented society, the computer manufacturing industry and the basic problems (associated in these three areas). The interim report is the summary of these studies. The final report, which will be more specific, will be completed by next June. This was the first report prepared by the Information Industry Division in 5 years.

In Chapter 1, the meaning and roles of the information-oriented society and the information industry are defined. In Chapter 2, the future goals of an information society and an information industry are explored. In Chapter 3, policy measures to realize the ideals of the information society and the information industry are suggested. The policy measures, which are identical to MITI's in its budget proposal for the coming year, include: (1) development and promotion of the basic design of

of 4th generation computers (operating systems technology and new terminal operations technology); (2) development and promotion of optical measurement control systems; (3) research and development of high speed computers for scientific and technological use; (4) research and development of 5th generation computers; (5) development of software technology; (6) study of basic technology with innovative approaches. Thus, the special feature of the report is its emphasis upon the development and promotion of highly sophisticated information-related technologies.

The interim report, in Chapter 1, after defining the information society, states that if the nature of the information use in the late 60's and 70's can be characterized as the first information revolution, then the paramount application of information at the present time ushered in by progress in semi-conductor technology should be called the second information revolution.

In Chapter 2, the report lists three goals of an information-oriented society in the 1980's worthy of consideration as follows: (1) international contributions in the field of information sharing through economic strength; (2) overcoming limitations of being a resource-poor nation; (3) (creation of) a society with vitality and wealth. It also foresees the character of the computer industry and the information management industry in the 1980's.

Chapter 2 presents a series of policy measures that should be implemented to realize an information society, and states that since this is a national goal, the government should clearly identify the way to achieve it and accordingly develop positive policy measures. Furthermore, it recommends that the basic plans for an information society be so implemented that they will in turn develop technology and bring about international contributions. Finally, the interim report concludes: "The only way for an industrialized country like Japan to survive under the increasingly harsh international and domestic conditions is to thoroughly push for the development of the information age. The world expects it too."

9689

CSO: 4105

SCIENCE AND TECHNOLOGY

LAUNCH OF TWO SATELLITES IN FEBRUARY 1981 SET

Tokyo JPE AVIATION REPORT-WEEKLY in English 24 Dec 80 pp 7-8

[Text]

Tokyo University plans to launch the Astro A, its seventh scientific satellite, with the M-3S-2 rocket Feb. 16, while the National Space Development Agency (NASDA) intends to launch the ETS-IV engineering test satellite with its seventh N rocket or the first N-II Feb. 4.

These plans are part of Japan's second rocket launching program for FY 1980, which was approved by the Space Activities Commission last week.

The 190-kilogram Astro A is designed to observe solar flare at a peak of solar activities, which the sun is reaching from 1980 to 1981 for the first time in eleven years. Data from the satellite will be used to study the phenomenon.

The ETS-IV will be put into a transfer orbit with an inclination angle of 28.5 degrees, which is 230 kilometers at the perigee and 36,000 kilometers at the apogee. The launching is aimed to evaluate functions and performance of the N-II rocket, an advanced version of the N-I rocket, and ground facilities.

Tokyo University will also launch the S-310-9 rocket Jan. 22 and the S-520-2 rocket Jan. 28. The S-310-9 will observe temperatures in the intermediate atmosphere and the lower ionosphere at sunrise. In launching the S-520-2, Tokyo University will evaluate flight performance and airframe characteristics of the rocket, especially an improved nozzle. The rocket will also conduct basic experiments on microwave transmission beams for future solar power generation in space and operation of the ionospheric plasma.

NASDA will launch two other rockets in early 1981. Launching of the ninth TT-500A rocket Jan. 15 is designed to confirm functions of tracking and launch systems. The rocket will also conduct experiments on manufacture of amorphous semiconductor materials in space. Another rocket, the T-30 of the MT-135P series to be launched Feb. 5, will collect meteorological data over Tanegashima Island, including wind direction and velocity, and temperatures.

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SCIENCE AND TECHNOLOGY

LIQUEFIED OXYGEN, HYDROGEN ENGINE TESTS SUCCESSFUL

Tokyo JPE AVIATION REPORT-WEEKLY in English 14 Jan 81 pp 8-9

[Text]

The National Space Development Agency (NASDA) of Japan has successfully completed ground burning tests of the liquefied oxygen/hydrogen engine, the prototype of the LE-5, the second stage engine for the H-1 rocket which NASDA plans to launch during the decade starting in FY 1985.

The tests were conducted at Tashiro Testing Facility of Mitsubishi Heavy Industries Ltd. (MHI) located at Tashiro, Akita Prefecture. Twelve burning tests were made, totaling 230 seconds.

The world's first expander bleed system was used four times for starting the engine, and was proven successful. The system utilizes vaporized hydrogen for pumping fuel and oxidant. It eliminates complicated starting equipment. In the LE-5, the expander bleed cycle will start the engine and then it will be switched to the normal gas-generating cycle for continuous running.

The second stage booster for the H-1 rocket, the LE-5 will have a thrust of 10 tons/440 sec in vacuum atmosphere. It is being developed by MHI, IHI and other aerospace manufacturers under contracts from NASDA.

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SCIENCE AND TECHNOLOGY

MITI TO INAUGURATE EARTH RESOURCES SATELLITE BODY

Tokyo JPE AVIATION REPORT-WEEKLY in English 21 Jan 81 pp 8-9

[Text]

The Ministry of International Trade and Industry (MITI) plans to establish a new organization in April to accelerate Japan's domestic development of an earth resources satellite as the government-drafted FY 1981 budget include funds for research and development of the satellite.

The organization will be a research association under the "mining and manufacture industry technology research association law" or an incorporated foundation like Civil Transport Development Corp. which represents Japanese interests in the Boeing 767 (YX) program.

The FY 1981 budget includes ¥1,070 million for development of software technology for the satellite, although the request of MITI and the Science & Technology Agency for development of the satellite hardware has been rejected.

MITI intends to engage the new organization in analysis of Japan's aerial photo data and research into a system for satellite data analysis while introducing know-how from the United States for analyzing data from the synthetic aperture radar, the key sensor of the satellite.

The organization is designed to consist of satellite sensor manufacturers and experts on resource prospecting in the oil, metal and mining industries.

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